MURRAY CITY
SINGLE FAMILY RESIDENTIAL
PLAN SUBMITTAL REQUIREMENTS

Name of Applicant_____Permit application #_____
Building Address or Lot #_____

In order to expedite your plan review, please check your plans and application to be sure the following information has been included. When each of the items have been checked by you, sign the bottom of the form and have the Building Department verify that all needed information is included. Submit the form with your application, plan review deposit, and two (2) sets of plans for Building Department review. NOTE: APPLICATIONS FOR BUILDING PERMITS CANNOT BE ACCEPTED FOR PLAN REVIEW UNTIL THE SUBMITTAL IS COMPLETE.

***COMMUNITY DEVELOPMENT APPROVAL**

___ Approval signature from Planning and Zoning

***PROJECT COMPLETION DEPOSIT**

___ Project completion deposit of $1,000.00 (refunded after final inspection approval)

***BUILDING PERMIT APPLICATION**

___ Contractor's name, phone number, address, and contractor's state license number for:
- ___ General contractor - attach copy of license
- ___ Electrical contractor - attach copy of license
- ___ Plumbing contractor - attach copy of license
- ___ Mechanical contractor - attach copy of license

___ Type of improvement/kind of construction

___ Signature of owner, contractor, or authorized agent with date signed

***SITE PLAN**

___ Drawn to scale with scale indicated (1"=20' or larger)

___ North arrow

___ Lot dimensions--all sides

___ Size and location of any easements or right-of-ways

___ Names and locations of all adjacent streets

___ Locations of proposed and existing structures

___ Setback dimensions--front, rear, and all sides

___ Outside building dimensions and distances between buildings on building site

___ Driveways, exterior stairs, landings, patios, and decks
*___ Relative elevations of top of foundation and all lot corners,
The reference datum shall be selected by one of the following:
1. The average elevation of the top back of curb abutting the lot on which the building is to be built.
2. In the absence of curb and gutter, the average elevation of the center line of the street abutting the lot on which the building is to be built.
3. Where any part of the rear lot line is more than 6 feet above the average top back of curb, the average elevation of the perimeter of the lot on which the building is being built.
___ Proximity of building to any slopes greater than 3 horizontal to 1 vertical showing steepness and height of slope
___ Location, type, and elevation of any retaining walls

BUILDING PLANS

___ Drawn to scale with scale indicated (1/4"=1' or larger)
*___ Identify options which will be used on plans and cross out any options shown on plan not to be used
___ Footing plan with all continuous and spot footing sizes, location, and reinforcement
___ Floor plan layouts and use of all rooms (include future uses)
___ Main floor
___ Second story
___ Basement (indicate portions finished or unfinished)
___ Garage/carport
___ Dimensions for overall length and width
___ Complete dimensions of all rooms, decks, porches, landings, stairs, cantilevers, bearing walls, and column locations
___ Ceiling heights all levels
___ Sizes and types of doors
___ Sizes and types of windows (showing required safety glazing)
___ Window well dimensions for emergency escape windows below grade
___ Fire separation between house and garage
___ Stairway landings, rise, run, handrail, and headroom heights for interior and exterior stairs
___ Guardrail height and pattern
___ Building elevations (exterior views)
___ Front
___ Rear
___ All sides
___ Finish grade line on all sides

___ Depth of footings below finish grade
___ Pitch of roof
___ Finish materials
___ Attic ventilation and access
___ Crawl space ventilation and access
___ Cross sections drawn SPECIFICALLY for this structure with materials to be used
___ Typical footing size, depth, and reinforcement
___ Foundation wall height, thickness, and reinforcement
___ Foundation sill and anchor bolts
___ Wall material, stud size and spacing, wall sheathing, interior finish, weather barrier, exterior finish, and masonry veneer
___ Floor sheathing
___ Solid blocking
___ Roofing material and sheathing
___ Framing details
*___ Braced wall panel locations, methods, materials, and details for homes that qualify as conventional construction

OR

*___ STRUCTURAL ENGINEER'S STAMP, SIGNATURE, AND DATE ON CALCULATIONS FOR HOMES WITHOUT ADEQUATE BRACED WALL PANELS TO QUALIFY AS CONVENTIONAL CONSTRUCTION AND HOMES OF UNUSUAL SHAPE AND/OR SIZE. (All details indicated by calculations must be clearly shown on an engineer's summary sheet and on the plans, or plan shall be stamped, signed, and dated by the engineer. Plans must show shear walls, hold-downs, etc., as required by engineering.)

___ Grade and species of lumber
___ Size and material of all beams, headers, and columns
___ Rafter size, spacing, spans, and ties and/or truss layout
___ Joist size, spacing, and spans
___ Bearing wall construction
___ Insulation R-factors for walls, attics, and floors over unheated spaces
___ Masonry fireplace and chimney details with reinforcement

ELECTRICAL DETAILS

___ All light and fan locations
___ AFCI's/GCFI's indicated
___ Smoke detector locations

PLUMBING DETAILS

___ Location of all plumbing fixtures including layout for future fixtures
___ Floor drains, water heater, clothes washer and dryer locations

MECHANICAL DETAILS

___ Furnace location
___ Combustion air location
*___ Mechanical sizing information to include gas line sizing form. (Attached)
___ Heating and Cooling load calculations per manual J
___ Manual J Summary form (attached)
___ Manual D calculations and summary form. (Attached)

ENERGY ANALYSIS

*___ Energy analysis or completed "Energy Checklist" form (attached) or a RESCheck computer printout

My signature below indicates that I have carefully reviewed the plans and verified that all of the items above have been included. **I understand that failure to provide needed information at this time will delay the processing of my permit.**

* _____ _____
Applicant's Signature Date

* _____ _____
Building Inspection Division Acceptance Date

A "SUMMARY OF COMMON REQUIREMENTS FOR RESIDENTIAL CONSTRUCTION" list is available upon request.

If you need assistance from a Plan Reviewer, please make an appointment so we can spend some time with you to answer questions related to the "summary".

MURRAY CITY
ENERGY CHECKLIST/RESIDENTIAL

If an energy analysis is not provided, this form shall be filled out so we can complete the plan review. All buildings shall comply with the Model Energy Code.

BUILDING COMPONENT	INSULATION VALUE	AREA/PERIMETER
CEILING WITH ATTIC	R-VALUE=_____	_____SQ.FT.
CEILING WITHOUT ATTIC	R-VALUE=_____	_____SQ.FT.
EXTERIOR WALL (less window area)	R-VALUE=_____	_____SQ.FT.
GLAZING (to include basement windows)	U-VALUE=_____	_____SQ.FT.
(If basement walls are insulated)	U-VALUE=_____	_____SQ.FT.
EXTERIOR DOORS	R-VALUE=_____	_____SQ.FT.
FLOORS (over unheated spaces)	R-VALUE=_____	_____SQ.FT.
(over outdoor air)	R-VALUE=_____	_____SQ.FT.
SLABS (not basement)	R-VALUE=_____	_____LIN.FT.
BASEMENT WALLS (if floor over unheated space is not insulated)	R-VALUE=_____	_____LIN.FT.

FURNACE:

MAKE:_____
MODEL:_____
EFFICIENCY RATING:_____

MURRAY CITY BUILDING INSPECTION

4646 S 500 W - MURRAY CITY UT 84123
(801) 270-2431 - (801) 270-2414 (Fax)

MECHANICAL SIZING INFORMATION

PERMIT NUMBER:_____

ADDRESS:_____ LOT NUMBER:_____

NAME OF CONTRACTOR/DESIGNER:_____

PHONE NUMBER: ( ) FAX NUMBER: ( )

1. VENT HEIGHT:_____

2. **BOILER OR FURNACE** INPUT RATING: Min.**(Derated*)**_____ Max.(Plate Rating)_____
   CONNECTOR RISE:_____ CONNECTOR RUN:_____
   CONNECTOR SIZE:_____
   NO. & DEGREE ELBOWS BEYOND TWO 90°_____

2a. BOILER OR FURNACE #2 INPUT RATING: Min.**(Derated*)**_____ Max.(Plate Rating)_____
   CONNECTOR RISE:_____ CONNECTOR RUN:_____
   CONNECTOR SIZE:_____
   NO. & DEGREE ELBOWS BEYOND TWO 90°_____

3. **WATER HEATER** INPUT RATING:_____
   CONNECTOR RISE:_____CONNECTOR RUN:_____
   CONNECTOR SIZE:_____
   NO. & DEGREE ELBOWS BEYOND TWO 90°_____

3a. WATER HEATER #2 INPUT RATING:_____
   CONNECTOR RISE:_____CONNECTOR RUN:_____
   CONNECTOR SIZE:_____
   NO. & DEGREE ELBOWS BEYOND TWO 90°_____

4. TOTAL BTU INPUT OF ALL APPLIANCES:_____

5. COMMON VENT SIZE FOR THE SYSTEM:_____

6. COMBUSTION AIR SIZE (METHOD USED):_____

*** Deration multiplier for Murray area (.83)**

NOTE: IF A MANIFOLD IS USED TO CONNECT THE APPLIANCES ON THE HORIZONTAL IT SHALL BE THE SAME SIZE AS THE VENT.

Please provide Complete Gas Pipe layout and sizing detail on Reverse Side.

THIS FORM MUST BE COMPLETED AND APPROVED

TO THE BEST OF MY KNOWLEDGE, I CERTIFY THAT THE INFORMATION CONTAINED WITHIN THIS DOCUMENT IS TRUE AND CORRECT AND MEETS THE REQUIREMENTS OF THE CURRENTLY ADOPTED MECHANICAL CODE

_____
SIGNATURE OF CONTRACTOR/DESIGNER

_____
DATE

SUPPLY TWO COPIES

ALL APPLIANCES REQUIRED BY MANUFACTURER TO BE DERATED/ALTITUDE ADJUSTED HAVE BEEN/WILL BE COMPLETED.

_____
SIGNATURE OF CONTRACTOR/DESIGNER

_____
DATE

MANUAL J Summary

NOTE: The load calculation must be calculated on a room basis. Room loads are a mandatory requirement for making Manual D duct sizing calculations.

Design Information:

Project: _____

_____

Location: _____

	Htg	Clg
Outside db (˚F)	_____	_____
Inside db (˚F)	_____	_____
Design TD (˚F)	_____	_____

If design conditions used are not those listed in Table 1 or 1A Manual J please justify._____

_____

_____

Infiltration

Method: _____

Construction Quality_____

Fireplaces (open fire box): _____

Summary

Total Heating Load: _____(Btuh)

Heating Fan: _____(CFM)

Total Cooling Load: _____(Btuh)

(Total Cooling = Sensible load + Latent load)

Cooling Fan: _____(CFM)

Heating Equipment

Furnace Manufacturer:_____

Furnace Model #: _____

Sea Level Input : _____(Btuh)

AFUE: _____ Multi-stage: Yes __ No__

Output Adjustment (adjust for efficiency, altitude de-ration: Adjusted Output:_____(Btuh)

Attach adjustment calculations- must be per manufacturers' instructions/requirements

If Adjusted Output is greater than 1.5 times the Total Heating Load, please justify:

_____

_____

_____

Cooling Equipment:

A/C Manufacturer:_____

A/C model #: _____

Cooling Capacity: _____(Btuh)

Condenser SEER : _____

Evap. Coil M/N: _____

Expansion/Metering: Orifice___ TXV___

Actual SEER rating with selected coil, furnace and metering. SEER: _____

Attach manufacturer's data or ARI report showing actual cooling capacity and actual SEER using these components.

If Cooling Capacity is greater than 1.3 times the Total Cooling Load, please justify:

_____

_____

_____

_____

Manual J Summary- Instructions

The load information asked for on the summary must be taken from the actual load calculation completed on the project.

Project: Identify project name, lot number- information that matches the plan submitted.

Location: The city or town must be reasonably close to actual location. Software used may not have the specific location in the database.

Outside Dry Bulb, Inside Dry Bulb: *Temperature data should be from Table 1 of ACCA Manual J. It is understood that there may be situations where a slight adjustment to this values is necessary. If values are adjusted- please justify the adjustment. Provide both heating (Htg) and cooling (Clg) design temperatures. If inside or outside design conditions listed are not the same values listed in Manual J, explain why the different values were used.*

Design TD: *TD-(temperature difference) The temperature difference between inside and outside design temperatures.*

Infiltration: *Infiltration calculations are based on the Construction Quality. Version 7 of Manual J uses Best, Average or Poor to evaluate Infiltration. Version 8AE uses Tight, Semi-Tight, Average, Semi-Loose and Loose to evaluate. Version 8 goes into very specific detail for a more accurate number. Note method used on summary. Open firebox fireplaces that draw air from inside the home must be included, even if there is a 4" 'combustion air' flex bring air into the fireplace.*

Total Heating and Cooling Load: *This is the whole house load information used for equipment sizing taken directly from the completed attached Load Calculation. Load must account for all factors such as infiltration, ventilation, appliances and people. Room by room information will be used in completing the duct design.*

Heating and Cooling Fan: *Software used to perform the calculation will typically provide a minimum CFM based on the minimum required size of the equipment. This number may be adjusted to meet specific requirements of the home. Heating and Cooling CFM may or may not be the same. The cooling CFM should be around 400 CFM per ton of cooling. If it is not, justify.*

Heating Equipment: *List specific equipment to be used. This information is not required on the Load Calculation documents, however it must be provided here to verify equipment sizing against calculated loads. Sea Level Input will be the listed input on the furnace label and in manufacturers' documentation.*

AFUE: *The AFUE (Annual Fuel Utilization Efficiency) listed here will be compared to that listed on plans and on energy compliance documents (REScheck or other). It must also match the equipment actually installed in the home.*

Adjusted Output: *This number is the actual output that will be attained after the furnace has been adjusted for efficiency and de-rated for altitude (typically 4% for every 1000' above sea-level). Some*

manufacturers may have different requirements- adjustments should be made per their requirements. Calculations should be attached. Example: 80,000 input 91% efficient furnace in Salt Lake, with manufacturers' installation instructions specifying 4%/1000'. 80,000 X .91 X .83 = 60,424 BTUh.

Size Justification: *Example: If the Total Heating Load = 29954 BTUh. A furnace with an adjusted output larger than 45,000 BTUh (29954 X 1.5 = 44931) would require an explanation justifying the size.*

Cooling Equipment: *List specific equipment to be used.*

Cooling Capacity: *Manufacturers base data is based on ARI Standard 210/240 ratings; 95˚F outdoor air temperature, 80˚F db/67˚F wb entering evaporator. If the locations Design Conditions are different than this standard, refer to manufacturers expanded ratings for capacities at actual design conditions.*

Condenser SEER: *This SEER (Seasonal Energy Efficiency Ratio) is the listed SEER for this model series, not the exact SEER with components used this system.*

Evap. Coil M/N: *List the exact model number for the evaporator coil used this system.*

Expansion/Metering: *Provide the specific metering used- orifice or TXV (thermostat expansion valve). If the manufacturer has several options, list the option used.*

Actual SEER rating: *Attach manufacturers' documentation or ARI report showing actual cooling capacity, and actual SEER using the components used this system. Indoor air handler/ furnace blower must be included in this documentation.*

Size Justification: *If cooling capacity is 30% greater than the calculated Cooling load explain. High latent (moisture) loads can be listed here. Special requirements particular to the customer may also be noted here.*

Manual D Calculations and Summary:

Manual **D** Calculations and Summary:

Project: _____

Friction Rate Worksheet

Step 1) **Manufacturer's Blower Data**

External static pressure (ESP)= _____ IWC CFM = _____

Step 2) **Device Pressure Losses**

Evaporator Coil	_____
Air Filter	_____
Supply Register	0.03
Return Grill	0.03
Other Device	_____

Total device losses (DPL) _____ IWC

Step 3) **Available Static Pressure**

ASP = (ESP – DPL) _____ IWC

Step 4) **Total Effective Length (TEL)**

Supply-side TEL + Return-side TEL = (_____ + _____) = _____ Feet

Step 5) **Friction Rate Design Value (FR)**

FR = (ASP X 100) ÷ TEL = (____ X 100) ÷ _____ = _____ (IWC/100')

This friction rate (FR) calculated in Step 5 is the rate to be used with a duct calculator or a friction chart for the duct design on this project.

Attach at a minimum, a one line diagram showing the duct system with fittings, sizes and lengths.